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Estimating Litter Interception Capacity of the Forest Floor - a Laboratory Experiment

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Floor litter in forests has played an important role in water distribution that intercepts rain water, stores water in litter layer, and evaporates water into the air. Rainfall interception capacity of forest floor has been estimated in the laboratory experiment with leaf samples of coniferous and deciduous forests. Rainfall simulation experiment has designed to measure the variation of runoff and infiltration on litter layer when rain applied. Overstory tree, leaf shape and size, and thickness of the layer were regarded as experiment variables.

Experimental measurements showed a larger proportion of water was intercepted at the early stage of rain, and became nearly constant after about 2 minutes of raining. When rain ceased, the water moisture contents in the layer declined exponentially. The storage capacity of litter layers was linearly increased as leaf area dimension increased. Coniferous forest has higher interception capacity by floor litter, but a little difference was found in the intercepted rain water between broadleaves and needle leaves litter.

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